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January 17<sup>th</sup>, 2017

#### SUMMARY OF INFORMATION COLLECTED

During the tracking period beginning January 1, 2016 ending December 31, 2016 seven bypasses were recorded at the wastewater treatment plant and five SSO events were recorded. Included is a spreadsheet titled "Bypass-SSO Tracker" tabulating the events listed above.

#### CONFIRMED I/I SOURCES

The City had approved the bid by ordinance for approximately 5,852' of 8" and 234' of 10" sewer pipe in October of 2015. This year exceeded our usual amount by \$37,000, totaling \$177,000. Although there were some addendums made to the bid packet, there were only a few changes made, and those areas were substitute to a similar footage. This area was mostly focusing on some of our 10x the flow area. Some of the other lining was areas that have been problematic and have been CCTV and chosen. A total of 98 taps were found during the CCTV of this work; 52 of said taps were eliminated by not cutting out the liner at the tap location. This work was completed by February of 2016. Attached you will find the bid packet and ordinance called "Visu-Sewer CIPP 2016".

Crews have worked diligently on the replacing of manholes, taps and mains. In addition to, crews have removed/added manholes and taps. Crews replaced approximately 2,592' of 8" main, replaced twenty-three taps, removed one tap, replaced six manholes, removed one manhole and added two manholes. During normal preventative maintenance crews have spotted and repaired twenty-two cleanouts. You will find this work performed on a spreadsheet titled "I & I Sources Confirmed". Crews have also completed smoke testing on approximately 4,210' of main. This area was targeted due to crews noticing broken cleanouts during preventative maintenance measures on undeveloped land. We use this method for finding broken cleanouts, illicit discharges into the collection system and faulty mains.

This year we started working on the central sewer collection basin; when in July of 2012 we received a wet weather flow study from Olson Associates that Scotts Consulting generated. This study confirmed that the central section charted 10 times the normal flow. We consider this section a priority and have focused our time on that section. Our intention is to start with the highest flow increase (during rain events) and work towards the lowest. The 10x area has the second highest levels of I&I.

We also went back through previous documentation (jetter reports and camera reports) and identified specific areas or problems that we believed to be a major source of I&I. We had time to catch up on some much-needed repairs in these untested areas outside the 14x and 10x areas to repair or eliminate these sources of I&I.

#### PREVENTIVE MAINTENANCE ACTIVITIES

Our sewer department is made up of 4.5 crew members and has been busy this year cleaning, inspecting and repairing sewer mains. The results of their labor are as follows. Included in this report is a spreadsheet titled "Jetter Report 2016". This spreadsheet lists and describes all cleaning and inspection of sewer mains and manholes performed during the reporting period beginning January 1, 2016 ending



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December 31, 2016. Crews cleaned 7.884 miles of sewer main (4.63 miles of said sewer main was root sawed); video inspected 1.74 miles of sewer mains and inspected approximately 254 manholes during this reporting period. Also included is a copy of the "Lift Station 2016" showing run times, any maintenance preformed on each lift station.

#### STATUS OF POA AND CIP

The City has accepted CIPP bids for the 2017 and 2018 years. You will find the bid packet for approximately 6407' of lining to be completed in the 2017 year and 6168' of 8" main to be completed in the 2018 year. This work will be completed by SAK. Our focus with this lining is to finish the 14x area, and start on the 10x area. Of the 6407' to be completed in 2017, 2832' falls in the 14x the flow area and the remainder is in the 10x the flow area. Of the 6168' to be completed in 2018, 5461' is located in the 10x the flow area and the remainder is areas we have CCTV and concluded to need attention. The 10x area is our next highest flow area. Attached will be a copy of the bid packet, although addendums were made to the bid packet, the attached maps will show aerial photographs of the actual mains to be lined.

We have spent much of this year training and familiarizing ourselves with our new GIS. Midland and us have been working together to correct this to better fit us. Crews have also been going out and making corrections that have been documented from past preventative maintenance. This entails corrections to Broadway Sewer project, manhole's that have been found and subdivision's that have been recently developed.

The Waste Water Treatment Plant (WWTP) has completed a few improvements. Smith and Edwards was awarded the bid to make improvements to the bar screen area, this entails the replacement of a 4.0-million-gallon bar screen to a 6.5-million-gallon bar screen. While making the improvements, the City had a compactor installed. Also during the 2016 calendar year, Smith and Edwards was awarded the bid for the restoration to the two clarifiers. This was to completely rebuild the weirs and troughs inside the clarifiers which were in dire need of attention; this work was completed mid-2016. The WWTP sought professional services for the west oxidation ditch. This was to replace all motors, rotors, gearboxes and remove side channel clarifier. In June, White River Engineering completed the engineering for this work and Smith and Edwards was awarded the bid in July. This work is supposed to begin in February of 2017.

Olsson Associates has completed the engineering for the removal of lift station #3. This is an elaborate project in downtown Bolivar. The project will replace approximately 3,500 feet of 15" pipe and 80 feet of 8" pipe with replacement or installation of approximately 25 manholes. This work will greatly reduce I & I in this area. This project is estimated to be in excess of \$1.0 million. When the city will be able to budget this amount and complete the project is unclear at this time.

The city has purchased a second flow meter. The flow meter has proven to be an essential tool to help track flows during wet weather events. This is also a great tool to show our progress we have made; which we are pleased to show. Attached you will find flow data on the progress made in the 14x area (which will be completely replaced/lined in 2017) and precipitation amounts for that month. To date, the data shows a significant reduction in I & I in the 14x area.



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#### VIOLATIONS

We have seventeen "Violations" during the reporting period of January 1, 2016 to December 31, 2016. Attached will be two forms tabulating these violations; "Permit Violations Exceeding Limitations" and "Bypass-SSO Tracker".